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Exercise - I (Conceptual Questions) Build Up Your Understanding

ROOTS TO INFLORESCENCE

1. Radish is an example of :-
(1) Fusiform root (2) Napiform root
(3) Conical root (4) Tuberous root

2. Roots associated with nitrogen fixing bacteria are
(1) Fusiform roots (2) Napiform roots
(3) Nodulated roots (4) Conical roots

3. The edible part of turnip is :-
(1) Modified Adventitious roots
(2) Modified tap root
(3) Stem
(4) Underground stem

4. Which is a modification of root that does not store food?
(1) Napiform root (2) Fusiform root
(3) Tuberous root (4) Stilt root

5. Shoot/Stem develops from :-
(1) Plumule (2) Radicle
(3) Both 1 & 2 (4) Endosperm

6. Which is an example of offset?
(1) *Cynodon dactylon* (2) *Eichhornia*
(3) *Fragaria* (4) *Mentha*

7. Rhizome of ginger is a modification of stem because :-
(1) It bears Adventitious roots
(2) It bears nodes and internodes
(3) It is underground
(4) It stores food material

8. Phylloclade is found in :-
(1) *Opuntia* (2) Cactus
(3) *Acacia* (4) Both (1) & (2)

9. Nodulated roots occurs in:-
(1) Liliaceae (2) Solanaceae
(3) Malvaceae (4) Fabaceae

10. Thorns and spines are :-
(1) Defensive organs
(2) Respiratory organs
(3) Both 1 & 2
(4) Storage organs

11. In onion the reduced disc like underground stem is :-
(1) Root (2) Rhizome
(3) Bulb (4) Tuber

12. Stem modified into leaf like structure and leaves are changed into spines in :-
(1) Phyllode (2) Tuber
(3) Phylloclade (4) All the above

13. The most advanced type of Inflorescence is:-
(1) Corymb (2) Capitulum
(3) Spadix (4) Catkin

14. Inflorescence in which many pedicellate flowers arising to form a umbrella like structure is :-
(1) Umbel (2) Catkin
(3) Capitulum (4) Verticillaster

15. Prop roots of Banyan tree are meant for :-
(1) Respiration
(2) Storage
(3) Providing support to big tree
(4) All

16. Which is not a stem modification :-
(1) Rhizome of ginger
(2) Corm of *Colocasia*
(3) Pitcher of *Nepenthes*
(4) Tuber of potato

17. A modification of petiole is :-
(1) Phyllode (2) Phylloclade
(3) Cladode (4) Corm

18. Cyathium inflorescence is found in :-
(1) *Croton* (2) *Ficus*
(3) *Euphorbia* (4) *Ricinus*

19. The floral leaves arise from :-
(1) Mother axis (2) Thalamus
(3) Root (4) Pedicel

20. What is the eye of potato ?
(1) Axillary bud (2) Accessory bud
(3) Adventitious bud (4) Apical bud

21. In *Ruscus,* the modification is :-
(1) Phyllode (2) Cladode
(3) Offset (4) Sucker

22. In turmeric, stem is a :-
(1) Tuber (2) Bulb
(3) Rhizome (4) Corm

23. Catkin inflorescence is found in :-
(1) Wheat (2) Oat
(3) Mulberry (4) Fig

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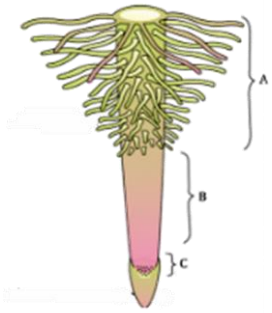
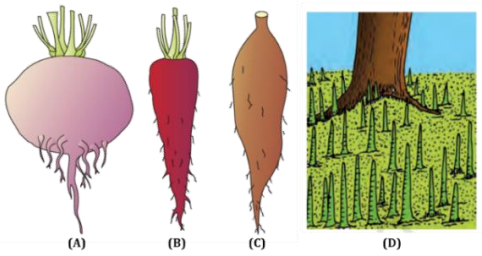
24. Spathe is present in :-
(1) Banana (2) Rice
(3) Marigold (4) Sunflower

25. The below figure is related to the root-tip identify zones A, B and C :-



(1) A—zone of elongation, B—zone of meiosis, C—zone of mitosis.
(2) A—zone of maturation, B—zone of meristematic activity, C—zone of elongation.
(3) A—zone of mitosis, B—zone of elongation, C—zone of root cap.
(4) A—region of maturation, B—region of elongation, C—region of meristematic activity.

26. The four sketches (A, B, C and D) given below represent the different types of roots. Which one of these is correctly identified in the option given along with its correct location and function



		Root	Example	Function
(1)	(A)	Napiform root	Turnip	Respiration
(2)	(B)	Conical root	Carrot	Storage
(3)	(C)	Tuberous root	Radish	Respiration
(4)	(D)	Pneumatophores	*Rhizophora*	Storage

27. In how many plants tap roots become swollen and stored food from given below :-
Wheat, *Asparagus*, Mustard, *Rhizophora*, Sweet Potato, Banyan, Radish, *Pothos*, Turnip, Maize, Carrot.
(1) Four (2) Three
(3) Five (4) Two

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28. Adventitious roots of how many plants show modification for food storage :-
Banyan tree, *Asparagus*, Dhalia, Sugarcane *Monstera*, Turnip, Sugar-beet and Sweet potato.
(1) 3 (2) 4 (3) 5 (4) 6

29. In some plants a slender lateral branch arises from the base of the main axis and after growing aerially for some time arch downwards to touch the ground. Here we are talking about :-
(1) *Pistia* and *Eichhornia*
(2) Peppermint and Jasmine
(3) Banana, pineapple and *Chrysanthemum*
(4) *Opuntia* and *Euphorbia*

30. Identify the correct match from the column I, II and III :-

1	Runner	a	Arch is present	i	Wild strawberry
2	Stolon	b	Horizontally running weak stem above the ground	ii	Doob grass
3	Sucker	c	Aquatic and fragile	iii	Mint
4	Offset	d	Obliquely upward growing subaerial stem	iv	Eichhornia

(1) 1-b-ii, 2-a-i, 3-d-iii, 4-c-iv
(2) 1-d-iii, 2-b-ii, 3-c-i, 4-a-iv
(3) 1-c-iii, 2-b-ii, 3-d-i, 4-a-iv
(4) 1-d-iv, 2-c-iii, 3-a-i, 4-b-ii

31. Which of the following is an incorrect match?
(1) Perigynous flower - Plum, rose and peach
(2) Monadelphous - Pea
(3) Epigynous flower - Guava, cucumber, and ray florets of sunflower
(4) Polyadelphous - *Citrus*

32. Name the petals A, B and C in vexillary aestivation shown in the below figure :-

(1) A - Standards, B - Wing, C - Perianth
(2) A - Standards, B - Keel, C - Wing
(3) A - Wing, B - Keel, C - Wing
(4) A - Standards, B - Wing, C - Keel

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FLOWER TO FAMILIES

33. Caryopsis fruit is found in :-
(1) Wheat (2) Pea
(3) Gram (4) Lentil

34. If the filaments are fused in a single group the condition is :-
(1) Monoadelphous (2) Polyadelphous
(3) Both 1 & 2 (4) Diadelphous

35. Pappus is modification of :-
(1) Bracts (2) Corolla
(3) Calyx (4) All

36. A characteristic of angiosperm is:-
(1) Flowers (2) Roots
(3) Seed (4) Stem

37. Adhesion in a flower is :-
(1) Union of dissimilar parts
(2) Union of similar parts
(3) Both (1) and (2)
(4) Fusion of carpels

38. The fourth whorl of flower is of :-
(1) Petals (2) Stamens
(3) Carpel (s) (4) Sepals

39. Fruit of brinjal is :-
(1) Berry (2) Hesperidium
(3) Drupe (4) Pome

40. Which of the following is false fruit ?
(1) Pome (2) Pepo
(3) Hesperidium (4) Drupe

41. A true fruit develops from :-
(1) Ovary (2) Thalamus
(3) Petals (4) Receptacle

42. Fruit of 'Ground nut" is :-
(1) Nut (2) Legume
(3) Lomentum (4) Capsule

43. The first whorl of flower is of :-
(1) Petals (2) Stamens
(3) Carpels (4) Sepals

44. Water melon is :-
(1) Pome fruit (2) Sorosis fruit
(3) Pepo fruit (4) Drupe fruit

45. Geocarpic fruit is :-
(1) Carrot (2) Radish
(3) Ground nut (4) Turnip

46. Tetradyanamous condition of stamens occur in members of :–
(1) Cruciferae (2) Malvaceae
(3) Solanaceae (4) Lilliaceae

47. Edible part in pomegranate is :-
(1) Testa (2) Epicarp
(3) Endocarp (4) Epidermis

48. Juicy hair-like structures observed in the lemon fruit develop from :-
(1) Exocarp
(2) Mesocarp
(3) Endocarp
(4) Mesocarp and endocarp

49. Which of the following represents the edible part of the fruit of Litchi:–
(1) Endocarp (2) Pericarp
(3) Juicy aril (4) Mesocarp

50. Epigynous flowers are present in :-
(1) Mustard (2) Brinjal
(3) China rose (4) Cucumber

51. In *Dianthus,* placentation is :-
(1) Basal (2) Free central
(3) Axile (4) Marginal

52. Ovary is half-inferior in the flower of :-
(1) Apple (2) Guava
(3) Peach (4) Garlic

53. The term "Keel" is used for special type of:-
(1) Sepals (2) Petals
(3) Stamens (4) Carpels

54. Polyadelphous stamens are found in :-
(1) Cotton (2) China rose
(3) Pea (4) Lemon

55. *Aloe* and Garlic are the plants of:–
(1) Leguminosae (2) Asteraceae
(3) Liliaceae (4) Poaceae

56. Zygomorphic flowers are found in:-
(1) Solanaceae (2) Malvaceae
(3) Fabaceae (4) Liliaceae

57. Replum is:-
(1) False placenta (2) False septum
(3) False ovule (4) False thalamus

58. Point out the correct example of cruciferae:-
(1) Mustard (2) Pea
(3) Onion (4) Brinjal

59. Placentation of mustard plant is:-
(1) Parietal (2) Axile
(3) Basal (4) Marginal

60. Edible part of potato is:-
(1) Inflorescence (2) Leaves
(3) Roots (4) Stem

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61. Ground nut belongs to family:-
(1) Fabaceae (2) Malvaceae
(3) Liliaceae (4) Cucurbitaceae

62. Bicarpellary ovary with parietal placentation and false septum is found in:-
(1) Cruciferae (2) Leguminosae
(3) Malvaceae (4) Compositae

63. Inflorescence in Liliaceae is generally: -
(1) Racemose (2) Solitary/Cymose
(3) Cyathium (4) Hypanthodium

64. Fibres are usually obtained from the members of:-
(1) Solanaceae (2) Malvaceae
(3) Leguminosae (4) Cruciferae

65. In Malvaceae the placentation is: -
(1) Marginal (2) Axile
(3) Basal (4) Parietal

66. Aestivation of petals in family Malvaceae is:-
(1) Valvate (2) Imbricate
(3) Twisted (4) Vexillary

67. Lady finger and cotton belong to family: -
(1) Malvaceae (2) Cruciferae
(3) Compositae (4) Liliaceae

68. Monoadelphous androecium is found in:-
(1) Compositae (2) Liliaceae
(3) Malvaceae (4) Cruciferae

69. Characteristic feature of Malvaceae family is:-
(1) Monothecous anthers
(2) Didynamous stamens
(3) Presence of staminodes
(4) Basal placentation

70. China rose (Shoe flower) belongs to :-
(1) Solanaceae (2) Malvaceae
(3) Papilionatae (4) Liliaceae

71. Spike of spikelets inflorescences commonly occurs in:-
(1) Cruciferae
(2) Papilionatae/Fabaceae
(3) Poaceae/Gramineae
(4) Solanaceae

72. Inflorescence in Solanaceae is:-
(1) Racemose (2) Cymose
(3) Hypanthodium (4) Verticillaster

73. ***Lycopersicum esculentum*** (Tomato) belongs to family:-
(1) Solanaceae (2) Malvaceae
(3) Cruciferae (4) Cucurbitaceae

74. ***Atropa belladona***, an important medicinal plant is of the family:-
(1) Liliaceae (2) Cucurbitaceae
(3) Cruciferae (4) Solanaceae

75. 'Simla mirch', chillies and potato belong to family:-
(1) Solanaceae (2) Compositae
(3) Gramineae (4) Cruciferae

76. ***Nicotiana,*** Petunia belong to :-
(1) Malvaceae (2) Liliaceae
(3) Solanaceae (4) Cruciferae

77. The drug 'Belladona' is obtained from :-
(1) *Atropa* (2) *Rauwolfia*
(3) *Solanum* (4) *Capsicum*

78. What is the major edible part of brinjal :-
(1) Calyx (2) Thalamus
(3) Placenta (4) Style

79. Basal placentation occurs in:-
(1) Poaceae (2) Solanaceae
(3) Malvaceae (4) Liliaceae

80. Diadelphous condition is common in :-
(1) Malvaceae (2) Cruciferae
(3) Liliaceae (4) Fabaceae

81. Root nodules occur in plants of family :-
(1) Fabaceae (2) Liliaceae
(3) Malvaceae (4) Compositae

82. Pulses yielding main family of plants is :-
(1) Poaceae (Graminae)
(2) Cucurbitaceae
(3) Liliaceae
(4) Papilionaceae (Fabaceae)

83. The floral formula of pea is represented by:-
(1) Br% ♀ $K_{(5)}\ C_{1+2+(2)}\ A_{(9)+1}\ \underline{G}_1$
(2) Br ⊕ ♀ $K_{(5)}\ C_5\ A_{1+(9)}\ \underline{G}_1$
(3) Br% ♀ $K_{(5)}\ C_{1+2+(2)}\ A_{9+1}\ \underline{G}_1$
(4) Ebr or Br % $K_{(5)}\ C_{1+2+(2)}\ A_{10}\ \underline{G}_1$

84. Which of the following statements is correct:-
(1) Flower is a modified root
(2) Flower is a modified shoot
(3) Flower is a modified leaf
(4) Flower is a modified inflorescence

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85. Twisted aestivation is found in :-
(1) Malvaceae (2) Asteraceae
(3) Fabaceae (4) Mimosoideae

86. Staminal tube is found in :-
(1) Solanaceae (2) Cruciferae
(3) Malvaceae (4) Poaceae

87. Bean and gram belong to the family :-
(1) Liliaceae (2) Fabaceae
(3) Solanaceae (4) Cruciferae

88. Fruit legume is characteristic feature of :-
(1) Solanaceae (2) Liliaceae
(3) Fabaceae (4) Malvaceae

89. Floral formula $\oplus\,\male\,\female\ K_{(5)}\overset{\frown}{C_{(5)}}A_5\underline{G_{(2)}}$ is shown by :-
(1) Onion, Garlic (2) Pea, Bean
(3) Tomato, Brinjal (4) All of the above

90. Parallel venation occurs in :-
(1) Liliaceae (2) Solanaceae
(3) Malvaceae (4) Fabaceae

91. In which of the families the stamens are in two whorls and epiphyllous :-
(1) Malvaceae (2) Solanaceae
(3) Liliaceae (4) Caesalpinoideae

92. A distinct monocot character shown by the flowers of Liliaceae is :-
(1) Hypogynous flowers
(2) Actinomorphic flowers
(3) Trimerous flowers
(4) Bisexual flowers

93. ***Allium cepa*** (onion) belongs to the family :-
(1) Solanaceae (2) Liliaceae
(3) Cruciferae (4) Compositae

94. Which of the family possess perianth of six tepals:-
(1) Mimosoideae (2) Solanaceae
(3) Liliaceae (4) Malvaceae

95. ***Colchicum autumnale*** belongs to :-
(1) Leguminosae (2) Cruciferae
(3) Liliaceae (4) Malvaceae

96. Smilax and ***Gloriosa*** belong to :-
(1) **Liliaceae** (2) **Solanaceae**
(3) **Leguminosae** (4) **Cruciferae**

97. The flower of Compositae is :-
(1) Epigynous (2) Perigynous
(3) Hypogynous (4) Half perigynous

98. Inferior ovary and cypsela fruit are found in:-
(1) Liliaceae (2) Cruciferae
(3) Solanaceae (4) Compositae

99. Presence of racemose head (Capitulum) and bicarpellary syncarpus ovary with basal placentation belongs to:-
(1) Malvaceae (2) Compositae
(3) Liliaceae (4) Solanaceae

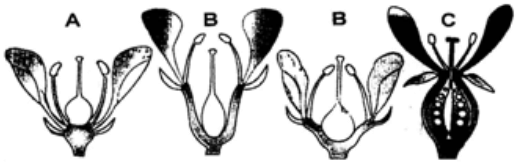
100. Tetradynamous stamens and cruciform corolla are characteristic features of :–
(1) ***Solanum tuberosum*** (Potato)
(2) ***Abelmoscus esculentus*** (Lady finger)
(3) ***Ochroma lagopus*** (Balsa)
(4) ***Brassica campestris*** (Mustard)

101. In which of the following family, perianth and trimerous flowers are found :–
(1) Malvaceae (2) Crucifereae
(3) Liliaceae (4) Papilionaceae

102. Grain of Maize is :–
(1) Seed
(2) Fruit
(3) Neither seed nor fruit
(4) Bud of flower

103. $Br\oplus\,\female\ \overset{\frown}{P_{(3+3)}}A_{3+3}\ \underline{G_{(3)}}$ floral formula belongs:-to which family :-
(1) Leguminosae (2) Liliaceae
(3) Labiatae (4) Graminae

104. Match the following figures with I, II and III :-
I - Hypogynous flower
II - Perigynous flower
III - Epigynous flower



(1) A - I B - II C - III
(2) A - I B - III C - II
(3) A - IIII B - II C - I
(4) A - III B - I C - II

105. The character of flower which is represented by floral diagram but not by floral formula is:-
(1) Aestivation and placentation
(2) Position of gynoecium and adhesion of stamen
(3) Fused sepals
(4) Fused petals

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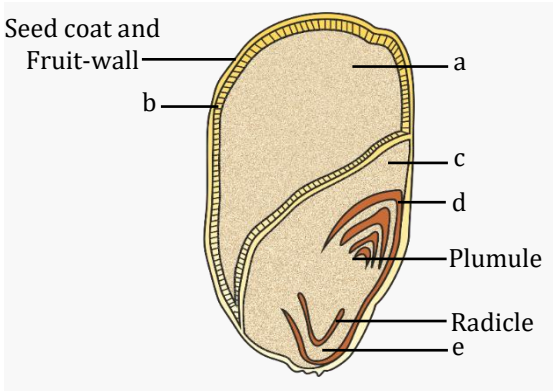
106. Recognise the figure and find out the correct matching:-



(1) a–Aleurone layer, b–Endosperm, c–Scutellum, d–Coleoptile, e–Coleorhiza
(2) b–Aleurone layer, c–Endosperm, a–Scutellum, e–Coleoptile, d–Coleorhiza
(3) b–Aleurone layer, a–Endosperm, c–Scutellum, d–Coleoptile, e–Coleorhiza
(4) b–Aleurone layer, a–Endosperm, c–Scutellum, e–Coleoptile, d–Coleorhiza

107. Parts of the fruits : Figure-I - Mango, Figure-II Coconut are shown in the following diagram. A, B, C and D are, respectively :-

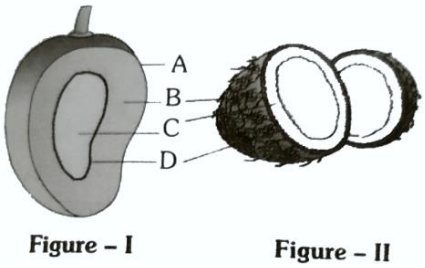


Figure – I Figure – II

(1) Epicarp, Mesocarp, Seed, Endocarp
(2) Epicarp, Mesocarp, Ovule, Endocarp
(3) Epicarp, Mesocarp, Ovary, Endocarp
(4) Epicarp, Mesocarp, Embryo, Endocarp

EXERCISE-I (Conceptual Questions) ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	1	3	2	4	1	2	2	4	4	1	3	3	2	1	3
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Answer	3	1	3	2	1	2	3	3	1	4	2	2	1	2	1
Question	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Answer	2	4	1	1	3	1	1	3	1	1	1	3	4	3	3
Question	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Answer	1	1	3	3	4	2	3	2	4	3	3	2	1	1	4
Question	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Answer	1	1	2	2	2	3	1	3	1	2	3	2	1	4	1
Question	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
Answer	3	1	3	1	4	1	4	1	2	1	3	2	3	3	1
Question	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
Answer	3	3	2	3	3	1	1	2	3	4	3	2	2	2	1
Question	106	107													
Answer	1	4													

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Exercise - II (Previous Year Questions) AIPMT/NEET

AIPMT 2006

1. Pineapple (ananas) fruit develops from:-
(1) A unilocular polycarpellary flower
(2) A multipistillate syncarpous flower
(3) A cluster of compactly borne flowers on a common axis
(4) A multilocular monocarpellary flower

2. In which of the following fruits the edible part is the aril ?
(1) Custard apple (2) Pomegranate
(3) Orange (4) Litchi

3. Long filamentous threads protruding at the end of a young cob of maize are:-
(1) Anthers (2) Styles
(3) Ovaries (4) Hairs

4. What type of placentation is seen in sweet pea?
(1) Basal (2) Axile
(3) Free central (4) Marginal

5. Pentamerous, actinomorphic flowers, bicarpellary ovary with oblique septa, and fruit a capsule or berry, are characteristic features of :-
(1) Asteraceae (2) Brassicaceae
(3) Solanaceae (4) Liliaceae

6. Replum is present in the ovary of flower of :
(1) Sun flower (2) Pea
(3) Lemon (4) Mustard

AIPMT 2008

7. The fruit is chambered, developed from inferior ovary and has seeds with succulent testa in :-
(1) Guava (2) Cucumber
(3) Pomegranate (4) Orange

8. The fleshy receptacle of syconus of fig encloses a number of :-
(1) Berries (2) Mericarps
(3) Achenes (4) Samaras

9. Dry indehiscent single-seeded fruit formed from bicarpellary syncarpous inferior ovary is:
(1) Berry (2) Cremocarp
(3) Caryopsis (4) Cypsela

AIPMT 2009

10. Cotyledons and testa respectively are edible parts in :-
(1) Cashew nut and litchi
(2) Groundnut and pomegranate
(3) Walnut and tamarind
(4) French bean and coconut

11. A fruit developed from hypanthodium inflorescence is called :-
(1) Caryopsis (2) Hesperidium
(3) Sorosis (4) Syconus

12. An example of axile placentation is :-
(1) Marigold (2) *Argemone*
(3) *Dianthus* (4) Lemon

13. Vegetative propagation in mint occurs by :-
(1) Sucker (2) Runner
(3) Offset (4) Rhizome

14. The floral formula $\oplus\ \male\ K_{(5)}\ \overset{\frown}{C_{(5)}\ A_5}\ \underline{G}_{(2)}$ is that of
(1) Tobacco (2) Tulip
(3) Soyabean (4) Sunnhemp

AIPMT-Pre 2010

15. In unilocular ovary with a single ovule the placentation is :-
(1) Axile (2) Marginal
(3) Basal (4) Free Central

16. The technical term used for the androecium in a flower of China rose *(Hibiscus rosa-sinensis)* is :
(1) Polyadelphous
(2) Monoadelphous
(3) Diadelphous
(4) Polyandrous

17. Ovary is half-inferior in the flowers of:-
(1) Cucumber (2) Guava
(3) Plum (4) Brinjal

18. Keel is characteristic of the flowers of:-
(1) Bean (2) Gulmohur
(3) *Cassia* (4) *Calotropis*

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AIPMT-Mains 2010

19. Vegetative propagation in *Pistia* occurs by:-
(1) Offset (2) Runner
(3) Sucker (4) Stolon

20. Which one of the following is a xerophytic plant in which the stem is modified into a flat, green and succulent structure ?
(1) Casuarina (2) *Hydrilla*
(3) *Acacia* (4) *Opuntia*

21. Consider the following four statements A, B, C and D and select the right option for two correct statements :-
Statements :
(A) In vexillary aestivation, the large posterior petal is called - *standard*, two lateral ones are *wings* and two small anterior petals are termed *keel*.
(B) The floral formula for Liliaceae is
$\oplus \male\!\female P_{(3+3)}\overset{\frown}{A}_{3+3}\,\underline{G}_{(3)}$
(C) In pea flower the stamens are monoadelphous
(D) The floral formula for Solanaceae is
$\oplus \male\!\female K_{(3)}C_{(3)}A_{(4)}\underline{A_{(2)}}$
The correct statements are :-
(1) (A) and (B) (2) (B) and (C)
(3) (C) and (D) (4) (A) and (C)

22. The correct floral formula of soyabean is :-
(1) % $\male\!\female K_5C_{1+(2)+2}\,A_{(9)+1}\,\underline{G_1}$
(2) % $\male\!\female K_{(5)}C_{1+2+(2)}\,A_{(9)+1}\,\underline{G_1}$
(3) % $\male\!\female K_{(5)}C_{1+2+(2)}\,A_{1+(9)}\,\underline{G_1}$
(4) % $\male\!\female K_{(5)}C_{1+(2)+2}\,A_{(9)+1}\,\underline{G_1}$

23. Aestivation of petals in the flower of cotton is correctly shown in :-
(1) (2)
(3) (4)

AIPMT-Pre 2011

24. The "Eyes" of the potato tuber are :-
(1) Root buds (2) Flower buds
(3) Shoot buds (4) Axillary buds

25. Flowers are Zygomorphic in :-
(1) Mustard (2) Gulmohur
(3) Tomato (4) Datura

26. The ovary is half inferior in flowers of :-
(1) Peach (2) Cucumber
(3) Cotton (4) Guava

27. A drupe develops in :-
(1) Mango (2) Wheat
(3) Pea (4) Tomato

28. Which one of the following statements is correct?
(1) In tomato, fruit is a capsule
(2) Seeds of orchids have oil-rich endosperm
(3) Placentation in *Primrose* is basal
(4) Flower of tulip is a modified shoot

29. The correct floral formula of chilli is :-
(1) $\oplus \male\!\female K_{(5)}C_5A_5\underline{G_{(2)}}$
(2) $\oplus \male\!\female K_{(5)}\overset{\frown}{C_{(5)}}A_5\underline{G_{(2)}}$
(3) $\oplus \male\!\female K_{(5)}C_{(5)}A_{(5)}G_2$
(4) $\oplus \male\!\female K_5\,\overset{\frown}{C_5}\,A_{(5)}\,G_2$

AIPMT-Mains 2011

30. Which one of the following diagrams represents the placentation in *Dianthus* ?
(1) (2)
(3) (4)

31. Sweet potato is homologous to :-
(1) Turnip (2) Potato
(3) *Colocasia* (4) Ginger

TG: @Chalnaayaaar

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32. Whorled, simple leaves with reticulate venation are present in :
(1) *Alstonia* (2) *Calotropis*
(3) Mustard (4) China Rose

33. Which one of the following pairs is wrongly matched while the remaining three are correct?
(1) *Agave* - Bulbils
(2) Grass - Runner
(3) Water hyacinth - Runner
(4) *Bryophyllum* - Leaf buds

AIPMT-Pre 2012

34. Placentation in tomato and lemon is :-
(1) Marginal (2) Axile
(3) Parietal (4) Free central

35. Vexillary aestivation is characteristic of the family:
(1) Solanaceae
(2) Brassicaceae
(3) Fabaceae
(4) Asteraceae

36. Phyllode is present in :-
(1) Australian Acacia
(2) *Opuntia*
(3) *Asparagus*
(4) *Euphorbia*

37. How many plants in the list given below have composite fruits that develop from an inflorescence? Walnut, poppy, radish, fig, pineapple, apple, tomato, mulberry:-
(1) Two (2) Three
(3) Four (4) Five

38. Cymose inflorescence is present in :-
(1) *Trifolium* (2) *Brassica*
(3) *Solanum* (4) *Sesbania*

39. The coconut water and the edible part of coconut are equivalent to :-
(1) Mesocarp (2) Embryo
(3) Endosperm (4) Endocarp

40. The gynoecium consists of many free pistils in flowers of :-
(1) *Papaver* (2) *Michelia*
(3) *Aloe* (4) Tomato

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AIPMT-Mains 2012

41. How many plants in the list given below have marginal placentation ?
Mustard, Gram, Tulip, *Asparagus*, Arhar, Sun hemp, Chilli, Colchicine, Onion, Moong, Pea, Tobacco, Lupin
(1) Six (2) Three
(3) Four (4) Five

NEET-UG 2013

42. In china rose the flowers are :-
(1) Zygomorphic, epigynous with twisted aestivation
(2) Actinomorphic, hypogynous with twisted aestivation
(3) Actinomorphic, epigynous with valvate aestivation
(4) Zygomorphic, hypogynous with imbricate aestivation

43. Among bitter gourd, mustard, brinjal, pumpkin chinarose, lupin, cucumber, sunnhemp, gram, guava, bean, chilli, plum, *Petunia*, tomato, rose, *Withania*, potato, onion, *Aloe* and tulip how many plants have hypogynous flower ?
(1) Eighteen (2) Six
(3) Ten (4) Fifteen

AIPMT 2014

44. Placenta and pericarp are both edible portions in:-
(1) Apple (2) Banana
(3) Tomato (4) Potato

45. When the margins of sepals or petals overlap one another without any particular direction, the condition is termed as :-
(1) Vexillary (2) Imbricate
(3) Twisted (4) Valvate

46. An example of edible underground stem is :-
(1) Carrot (2) Groundnut
(3) Sweet potato (4) Potato

47. An aggregate fruit is one which develops from:
(1) Multicarpellary syncarpous gynoecium
(2) Multicarpellary apocarpus gynoecium
(3) Complete inflorescence
(4) Multicarpellary superior ovary

AIPMT 2015

48. Leaves become modified into spines in :-
(1) Pea (2) Onion
(3) Silk Cotton (4) *Opuntia*

49. Perigynous flowers are found in :-
(1) Cucumber (2) China rose
(3) Rose (4) Guava

50. In ginger vegetative propagation occurs through:
(1) Offsets (2) Bulbils
(3) Runners (4) Rhizome

51. $\oplus \female K_{(5)}\overset{\curvearrowright}{C}_{(5)}A_5G_{(2)}$ is the floral formula of :-
(1) *Sesbania* (2) *Petunia*
(3) *Brassica* (4) *Allium*

52. Keel is the characteristic feature of flower of:-
(1) *Indigofera* (2) *Aloe*
(3) Tomato (4) Tulip

Re-AIPMT 2015

53. Axile placentation is present in :
(1) *Argemone* (2) *Dianthus*
(3) Lemon (4) Pea

54. Among china rose, mustard, brinjal, potato, guava, cucumber, onion and tulip, how many plants have superior ovary?
(1) Four (2) Five
(3) Six (4) Three

55. Which one of the following fruits is parthenocarpic?
(1) Banana (2) Brinjal
(3) Apple (4) Jackfruit

56. Roots play insignificant role in absorption of water in :-
(1) Wheat (2) Sunflower
(3) *Pistia* (4) Pea

NEET-I 2016

57. The standard petal of a papilionaceous corolla is also called :-
(1) Carina (2) Pappus
(3) Vexillum (4) Corona

58. Tricarpellary syncarpous gynoecium is found in flowers of :-
(1) Liliaceae (2) Solanaceae
(3) Fabaceae (4) Poaceae

59. Which of the following is **not** a stem modification?
(1) Pitcher of *Nepenthes*
(2) Thorns of citrus
(3) Tendrils of cucumber
(4) Flattened structures of *Opuntia*

60. Cotyledon of maize grain is called :-
(1) plumule (2) coleorhiza
(3) coleoptile (4) scutellum

61. Stems modified into flat green organs performing the functions of leaves are known as :-
(1) Cladodes (2) Phyllodes
(3) Phylloclades (4) Scales

NEET-II 2016

62. The term 'polyadelphous' is related to :-
(1) Corolla (2) Calyx
(3) Gynoecium (4) Androecium

63. How many plants among *Indigofera, Sesbania, Salvia, Allium, Aloe*, mustard, groundnut, radish, gram and turnip have stamens with different lengths in their flowers ?
(1) Five (2) Six
(3) Three (4) Four

64. Radial symmetry is found in the flowers of:-
(1) *Pisum* (2) *Cassia*
(3) *Brassica* (4) *Trifolium*

65. Free-central placentation is found in :-
(1) *Brassica* (2) *Citrus*
(3) *Dianthus* (4) *Argemone*

NEET (UG) 2017

66. Coconut fruit is a :-
(1) Berry (2) Nut
(3) Capsule (4) Drupe

67. In *Bougainvillea* thorns are the modifications of :-
(1) Adventitious root (2) Stem
(3) Leaf (4) Stipules

68. Root hairs develop from the region of :-
(1) Elongation
(2) root cap
(3) Meristematic activity
(4) Maturation

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69. The morphological nature of the edible part of coconut is:-
(1) Cotyledon (2) Endosperm
(3) Pericarp (4) Perisperm

NEET (UG) 2018

70. Offsets are produced by:-
(1) Meiotic divisions (2) Mitotic divisions
(3) Parthenocarpy (4) Parthenogenesis

71. Pneumatophores occur in :-
(1) Halophytes
(2) Free-floating hydrophytes
(3) Carnivorous plants
(4) Submerged hydrophytes

72. Sweet potato is a modified :-
(1) Stem (2) Adventitious root
(3) Tap root (4) Rhizome

NEET (UG) 2019

73. Placentation, in which ovules develop on the inner wall of the ovary or in peripheral part, is:
(1) Basal (2) Axile
(3) Parietal (4) Free central

NEET (UG) 2019 (Odisha)

74. Which of the following shows whorled phyllotaxy ?
(1) Mustard (2) China rose
(3) *Alstonia* (4) *Calotropis*

75. Bicarpellary ovary with obliquely placed septum is seen in :-
(1) *Brassica* (2) *Aloe*
(3) *Solanum* (4) *Sesbania*

76. Match the placental types **(column-I)** with their examples **(column-II):-**

Column-I	Column-II
(a) Basal	(i) Mustard
(b) Axile	(ii) China rose
(c) Parietal	(iii) *Dianthus*
(d) Free central	(iv) Sunflower

Choose the correct answer from the following **options:**
(1) (a)-(ii), (b)-(iii), (c)-(iv), (d)-(i)
(2) (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)
(3) (a)-(iv), (b)-(ii), (c)-(i), (d)-(iii)
(4) (a)-(iii), (b)-(iv), (c)-(i), (d)-(ii)

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NEET (UG) 2020

77. Ray florets have :-
(1) Half inferior ovary
(2) Inferior ovary
(3) Superior ovary
(4) Hypogynous ovary

78. The roots that originate from the base of the stem are :-
(1) Lateral roots
(2) Fibrous roots
(3) Primary roots
(4) Prop roots

79. The ovary is half inferior in :-
(1) Plum (2) Brinjal
(3) Mustard (4) Sunflower

NEET (UG) 2020 (COVID-19)

80. In some plants thalamus contributes to fruit formation. Such fruits are termed as :-
(1) False fruits
(2) Aggregate fruits
(3) True fruits
(4) Parthenocarpic fruit

81. Correct position of floral parts over thalamus in mustard plant is :-
(1) Gynoecium occupies the highest position, while the other parts are situated below it.
(2) Margin of the thalamus grows upward, enclosing the ovary completely, and other parts arise below the ovary.
(3) Gynoecium is present in the centre and other parts cover it partially.
(4) Gynoecium is situated in the centre, and other parts of the flower are located at the rim of the thalamus, at the same level.

82. Which of the following is the correct floral formula of Liliaceae ?
(1) $\% \, ♂ ♀ \, C_{1+2+(2)} A_{(9)+1} \underline{G}_{1}$
(2) $\oplus \, ♂ ♀ \, \overset{\frown}{K_{(5)} C_{(5)}} A_5 \, \underline{G}_{(2)}$
(3) $Br \oplus \, ♂ ♀ \, \overset{\frown}{P_{(3+3)}} A_{3+3} G_{(3)}$
(4) $\oplus \, ♂ ♀ \, K_{(5)} \overset{\frown}{C_{(5)}} A_5 \underline{G}_{(2)}$

83. Vegetative propagule in *Agave* is termed as:-
(1) Rhizome
(2) Bulbil
(3) Offset
(4) Eye

84. Identify the correct features of Mango and Coconut fruits:-
(i) In both fruit is a drupe
(ii) Endocarp is edible in both
(iii) Mesocarp in Coconut is fibrous, and in Mango it is fleshy
(iv) In both, fruit develops from monocarpellary ovary
Select the correct option from below :
(1) (i), (iii) and (iv) only
(2) (i), (ii) and (iii) only
(3) (i) and (iv) only
(4) (i) and (ii) only

NEET (UG) 2021

85. Diadelphous stamens are found in:-
(1) China rose
(2) *Citrus*
(3) Pea
(4) China rose and *Citrus*

86. Match **Column - I** with **Column - II**:-

Column - I	**Column - II**
(a) $\%\,\female\, K_{(5)}C_{1+2+(2)}A_{(9)+1}\underline{G}_1$	(i) Brassicaceae
(b) $\oplus\female\, K_{(5)}\overset{\frown}{C_{(5)}A_5}\underline{G}_2$	(ii) Liliaceae
(c) $\oplus\female\, \overset{\frown}{P_{(3+3)}A_{3+3}}\underline{G}_{(3)}$	(iii) Fabaceae
(d) $\oplus\female\, K_{2+2}C_4A_{2+4}\underline{G}_{(2)}$	(iv) Solanaceae

Select the **correct** answer from the options given below.

	(a)	**(b)**	**(c)**	**(d)**
(1)	(iii)	(iv)	(ii)	(i)
(2)	(i)	(ii)	(iii)	(iv)
(3)	(ii)	(iii)	(iv)	(i)
(4)	(iv)	(ii)	(i)	(iii)

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NEET (UG) 2022

87. Identify the **correct** set of statements:-
(a) The leaflets are modified into pointed hard thorns in *Citrus* and *Bougainvillea*
(b) Axillary buds form slender and spirally coiled tendrils in cucumber and pumpkin
(c) Stem is flattened and fleshy in *Opuntia* and modified to perform the function of leaves
(d) *Rhizophora* shows vertically upward growing roots that help to get oxygen for respiration
(e) Subaerially growing stems in grasses and strawberry help in vegetative propagation
Choose the **correct answer** from the options given below:
(1) (a) and (d) Only
(2) (b), (c), (d) and (e) Only
(3) (a), (b), (d) and (e) Only
(4) (b) and (c) Only

88. The flowers are Zygomorphic in:-
(a) Mustard
(b) Gulmohar
(c) *Cassia*
(d) *Datura*
(e) Chilly
Choose the **correct answer** from the options given below:
(1) (b), (c) Only
(2) (d), (e) Only
(3) (c), (d), (e) Only
(4) (a), (b), (c) Only

89. Which one of the following plants shows vexillary aestivation and diadelphous stamens ?
(1) *Pisum sativum*
(2) *Allium cepa*
(3) *Solanum nigrum*
(4) *Colchicum autumnale*

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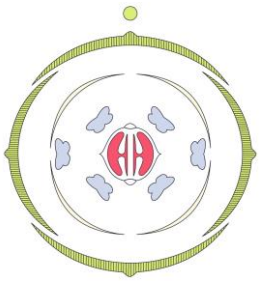
Re- NEET (UG) 2022

90. The Floral Diagram represents which one of the following families ?



(1) Fabaceae (2) Brassicaceae
(3) Solanaceae (4) Liliaceae

91. Match **List - I** with **List - II** :-

List - I	**List - II**
(a) Imbricate	(i) *Calotropis*
(b) Valvate	(ii) *Cassia*
(c) Vexillary	(iii) Cotton
(d) Twisted	(iv) Bean

Choose the **correct answer** from the options given below :

(1) (a) - (ii), (b) - (i), (c) - (iii), (d) - (iv)
(2) (a) - (ii), (b) - (i), (c) - (iv), (d) - (iii)
(3) (a) - (ii), (b) - (iv), (c) - (iii), (d) - (i)
(4) (a) - (i), (b) - (iii), (c) - (iv), (d) - (ii)

EXERCISE-II (Previous Year Questions) ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	3	4	2	4	3	4	3	3	4	2	4	4	1	1	3
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Answer	2	3	1	1	4	1	2	3	4	2	1	1	4	2	3
Question	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Answer	1	1	3	2	3	1	2	3	3	2	1	2	4	3	2
Question	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Answer	4	2	4	3	4	2	1	3	3	1	3	3	1	1	4
Question	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Answer	3	4	4	3	3	4	2	4	2	2	1	2	3	3	3
Question	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
Answer	3	2	2	1	1	1	3	2	1	3	1	2	1	1	2
Question	91														
Answer	2														

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Exercise - III Master Your Understanding

EXERCISE-III(A) [NCERT BASED QUESTIONS]

1. Roots developing from plant parts other than radicle are :-
(1) Tap roots
(2) Adventitious roots
(3) Both (1) & (2)
(4) Conical roots

2. Prop roots are :-
(1) Tap roots
(2) Adventitious roots
(3) Secondary roots
(4) All

3. A monocot can be distinguished from a dicot by:-
(1) Aestivation (2) Venation
(3) Both (1) & (2) (4) Placentation

4. In Racemose, flowers are arranged in :-
(1) Acropetal order (2) Centrifugal order
(3) Both (1) & (2) (4) Basipetal order

5. Axis of inflorescence is :-
(1) Pedicel (2) Peduncle
(3) Petiole (4) All

6. Stilt roots occur in :-
(1) Groundnut (2) Rice
(3) Sugarcane (4) Wheat

7. Function of stem is to :-
(1) Bear leaves and branches
(2) Conduction of water and minerals
(3) Conduction and storage of food
(4) All

8. Arrangement of leaves on a stem or branch is:-
(1) Venation (2) Vernation
(3) Inflorescence (4) Phyllotaxy

9. A slender lateral branch arises from the base of the main axis and after growing aerially for some time arch downwards to touch the ground. Such type of modification is :-
(1) Runner (2) Sucker
(3) Stolon (4) Offset

10. A lateral branch with short internodes and each node bearing a rosette of leaves and a tuft of roots in aquatic plants, such type of modification is :-
(1) Runner (2) Stolon
(3) Sucker (4) Offset

11. Lateral branches originate from the basal and underground portion of the main stem, grow horizontally beneath the soil and then comes out obliquely upward giving rise to leafy shoots, such type of modification is
(1) Runner (2) Stolon
(3) Sucker (4) Offset

12. In some leguminous plants the leaf base may become swollen, it is called :-
(1) Pulvinus (2) Lamina
(3) Leaf margin (4) Stipule

13. When the veins run parallel to each other within a lamina, the venation is termed as:-
(1) Parallel (2) Reticulate
(3) Both (1) and (2) (4) Pinnate

14. If the leaflets are present on a common axis, the rachis, leaf is called :-
(1) Palmate compound leaf
(2) Pinnate compound leaf
(3) Simple leaf
(4) Trifoliate leaf

15. If the leaf lets are attached at the tip of petiole, leaf is called :-
(1) Pinnate compound leaf
(2) Palmate compound leaf
(3) Simple leaf
(4) Unipinnate leaf

16. When single leaf arises at each node then phyllotaxy is called :-
(1) Alternate (2) Opposite
(3) Whorled (4) Pinnate

17. Opposite phyllotaxy is present in :-
(1) Mustard (2) Guava
(3) China rose (4) *Alstonia*

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TG: @Chalnaaydaar

18. Arrangement of sepals and petals in floral bud with respect of other members of same whorl is known as :-
(1) Venation (2) Aestivation
(3) Cohesion (4) Adhesion

19. Didynamous condition is related to :-
(1) Androecium (2) Inflorescence
(3) Gynoecium (4) All

20. Stamens attached to petals are :-
(1) Epipetalous (2) Epiphyllous
(3) Episepalous (4) All

21. Androecium is the whorl of :-
(1) Anthers (2) Stamens
(3) Filaments (4) Tepals

22. Syncarpous gynoecium has two or more :-
(1) Free carpels (2) Fused carpels
(3) Free Ovaries (4) All

23. A typical flower with superior ovary and other floral parts inferior is called :-
(1) Polygamous (2) Hypogynous
(3) Perigynous (4) Epigynous

24. Arrangement of ovules within the ovary is known as:-
(1) Aestivation (2) Placentation
(3) Both (1) & (2) (4) Cohesion

25. When gynoecium is present in the topmost position of thalamus, the ovary is known as:-
(1) Inferior (2) Half inferior
(3) Half superior (4) Superior

26. Drupe contains :-
(1) Stony endocarp (2) Stony mesocarp
(3) Edible epicarp (4) Edible endocarp

27. Monoadelphous character is found in :-
(1) Brassicaceae (Mustard)
(2) Malvaceae (Chinarose)
(3) Poaceae (Grass)
(4) Solanaceae (Potato)

28. Plants which yield pulses belong to family :-
(1) Fabaceae (2) Liliaceae
(3) Malvaceae (4) Solanaceae

29. Edible portion of Mango is :-
(1) Epicarp (2) Endocarp
(3) Mesocarp (4) Placenta

30. Fibrous coir is obtained from which part of the Coconut ?
(1) Epicarp (2) Mesocarp
(3) Endocarp (4) Seed coat

31. A characteristic feature of Ovary of Mustard is:-
(1) Presence of false septum
(2) Axile placentation
(3) Epigynous
(4) All of the above

32. In Cacti the spines are modification of :-
(1) Leaf (2) Branch
(3) Epidermis (4) Axillary bud

33. Placentaion in Solanaceae is :-
(1) Parietal (2) Marginal
(3) Axile (4) Basal

34. Coconut is which type of fruit ?
(1) Drupe (2) Cypsela
(3) Berry (4) Cremocarp

35. Arrangement of flowers on the floral axis is termed as inflorescence. Regarding to inflorescence which of the following statement is not correct :-
(1) In racemose – main axis is continues to grow
(2) In cymose – main axis terminates into flower
(3) In racemose – flowers are in basipetal succession
(4) In cymose – growth of main axis is limited

36. Regarding to symmetry of flower which of the following plant is odd:-
(1) Pea (2) Mustard
(3) *Datura* (4) Chilli

37. Find out the wrong match:-
(1) Actinomorphic – *Datura*
(2) Radial symmetry – Mustard
(3) Zygomorphic – Bean
(4) Bilateral Symmetry – Chilli

38. In which of the following plant flower can not be divided into two similar halves by any vertical plane:-
(1) Mustard (2) *Cassia*
(3) *Canna* (4) *Datura*

TG: @Chalnaaydaar

39. In which of the following plant gynoecium occupies the highest position while the other parts situated below it?
(1) Brinjal (2) Plum
(3) Rose (4) Guava

40. Match the following and select correct option:-

(a) Hypogynous	(i) Lily, Onion
(b) Perigynous	(ii) Cucumber, Ray florets of sunflower
(c) Epigynous	(iii) Plum, Peach
(d) Perianth	(iv) Chinarose, Brinjal

(1) a(iv), b(iii), c(ii), d(i)
(2) a(iv), b(ii), c(iii), d(i)
(3) a(iii), b(ii), c(iv), d(i)
(4) a(iii), b(iv), c(ii), d(i)

41. Calyx is the outermost accessory whorl of flower. What is the function of calyx?
(1) Help in pollination
(2) Help in protection of flower during bud condition
(3) Help in fertilization
(4) Help in seed germination

42. Match the following with respect to aestivation in petals and select correct option:-

(a) Valvate	(i) Chinarose
(b) Twisted	(ii) *Calotropis*
(c) Imbricate	(iii) Pea
(d) Vexillary	(iv) *Cassia*

(1) a(ii), b(i), c(iv), d(iii)
(2) a(ii), b(iii), c(iv), d(i)
(3) a(i), b(ii), c(iii), d(iv)
(4) a(iv), b(iii), c(ii), d(i)

43. Match the following:-

(a) Epiphyllous stamen	(i) *Citrus*
(b) Monoadelphous stamen	(ii) Pea
(c) Diadelphous stamen	(iii) Chinarose
(d) Polyadelphous stamen	(iv) Lily

(1) a(ii), b(i), c(iii), d(iv)
(2) a(i), b(ii), c(iii), d(iv)
(3) a(iv), b(iii), c(i), d(ii)
(4) a(iv), b(iii), c(ii), d(i)

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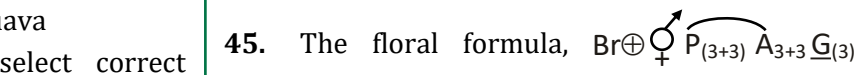
44. In which type of placentation, ovules are present on central axis:-
(1) Axile (2) Parietal
(3) Free central (4) Both 1 & 3

45. The floral formula,  belongs to plant :-
(1) *Allium cepa* (onion) (2) Sunflower
(3) *Cucurbita* (4) *Brassica* (Mustard)

46. Diadelphous stamens are found in :-
(1) Liliaceae (Onion) (2) Fabaceae (Pea)
(3) Poaceae (Wheat)
(4) Malvaceae (Chinarose)

47. Pneumatophores take part in :-
(1) Excretion (2) Feeding
(3) Respiration (4) Reproduction

48. Gram belongs to the family :-
(1) Gramineae (2) Fabaceae
(3) Liliaceae (4) Solanaceae

49. Ginger is :-
(1) Stem (2) Root
(3) Leaf (4) Fruit

50. Inflorescence in members of papilionideae is:-
(1) Racemose (2) Cymose
(3) Cyathium (4) Hypanthodium

51. *Sesbania* belongs to :-
(1) Liliaceae (2) Fabaceae
(3) Solanaceae (4) Cruciferae

52. In old classifications family leguminosae was classified into of three subfamilies. Which of the subfamily of leguminosae is now considered as fabaceae?
(1) Papilionoideae (2) Caesalpinoidae
(3) Mimosoidae (4) Compositae

53. Swollen placenta with oblique septum can be seen in:-
(1) Brassicaceae (2) Fabaceae
(3) Liliaceae (4) Solanaceae

54. Colchicine a mitotic poison can be obtained from a plant of:-
(1) Brassicaceae (2) Fabaceae
(3) Solanaceae (4) Liliaceae

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55. Perianth condition is characteristic of:-
(1) Brassicaceae (2) Fabaceae
(3) Solanaceae (4) Liliaceae

56. Match the following and select correct option:
(a) Mustard(i) Liliaceae
(b) Mulaithi(ii) Solanaceae
(c) Ashwagandha (iii) Fabaceae
(d) *Tulip* (iv) Brassicaceae
(1) a–(iv), b–(iii), c–(ii), d–(i)
(2) a–(iv), b–(iii), c–(i), d–(ii)
(3) a–(iii), b–(iv), c–(ii), d–(i)
(4) a–(i), b–(ii), c–(iii), d–(iv)

Exercise-III(b) [Analytical Questions]

57. Which one of the following is related with racemose inflorescence:-
(1) Catkin and Hypanthodium
(2) Raceme and Cyathium
(3) Corymb and umbel
(4) Verticillaster and spike

58. Which is correct pair for edible part :–
(1) Tomato – Thalamus
(2) Mango – Cotyledons
(3) Guava – Endosperm
(4) Date palm – Pericarp

59. Edible part of Banana :–
(1) Epicarp
(2) Mesocarp and less developed endocarp
(3) Endocarp and less developed mesocarp
(4) Epicarp & mesocarp

60. A small, dry, one-seeded fruit with its pericarp (fruit wall) fused with the seed-coat, developing from a monocarpellary gynoecium is called :-
(1) Cypsela (2) Siliqua
(3) Caryopsis (4) Samara

61. Flowers are zygomorphic in :-
(1) Mustard & Chilli (2) Radish & Datura
(3) Lily & Canna (4) Candytuft & Pea

62. Dye 'Neel' is obtained from:-
(1) *Indigofera tinctoria*
(2) *Brassica oleracea*
(3) *Brassica rapa*
(4) *Capsella bursa pestoris*

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63. A floral formula represents :-
(1) Plant symmetry (2) Floral position
(3) Floral characters (4) Floral functions

64. Bicarpellary, syncarpous gynoecium with bilocular ovary, axile swollen placenta and oblique septum occurs in:-
(1) Cruciferae (2) Solanaceae
(3) Cucurbitaceae (4) Liliaceae

65. Colchicine is obtained from :-
(1) *Atropa belladona*
(2) *Colchicum autumnale*
(3) *Withania somnifera*
(4) *Nicotiana tabacum*

66. 'Rat-ki-Rani', brinjal and tomato belong to family :-
(1) Mimosoideae (2) Liliaceae
(3) Solanaceae (4) Malvaceae

67. Plants with inferior ovary belongs to :-
(1) Malvaceae (2) Poaceae
(3) Solanaceae (4) Compositae

68. The leguminous plants are important in agriculture because :-
(1) They are disease resistant
(2) They require very little irrigation
(3) They help in nitrogen fixation
(4) Crops of legumes can be produced in a year

69. In family papilionaceae(fabaceae), 5 petals form a unique association, In which 3 different elements participate, these are standard (vexillum), Wings (alae) & Keel (carina). What is the number of these elements:-
(1) 1, 2, 2 respectively (2) 2, 1, 2 respectively
(3) 1,1,3 respectively (4) 2,2,1 respectively

70. In which family pentamerous flowers having monoadelphous stamens and dry dehiscent fruit are present :-
(1) Leguminosae (2) Malvaceae
(3) Cruciferae (4) Solanaceae

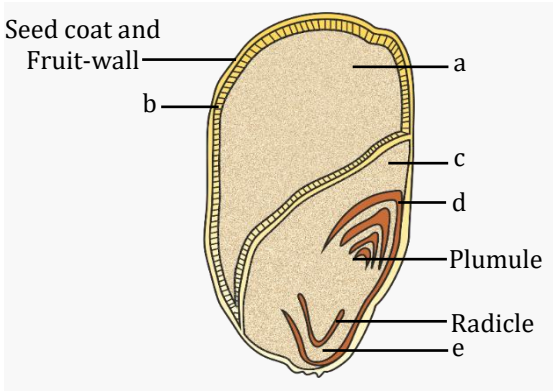
71. Brinjal, tobacco, potato and tomato are same due to :-
(1) All these plants belong to Solanaceae
(2) All these plants belong to Malvaceae
(3) All are vegetables
(4) Fruit of all has economic importance

72. The ovules after fertilisation, develop into:-
(1) Seeds (2) Fruits
(3) Endosperm (4) Pricarp

73. Seeds are endospermous in :–
(1) Bean (2) Gram
(3) Pea (4) Castor

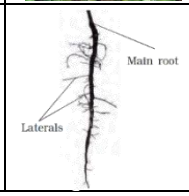
74. In which of the following membranous seed coat is fused with the Fruit wall ?
(1) Pea (2) Gram
(3) Maize (4) Castor

75. Recognise the figure and find out the correct matching:-



(1) a - Aleurone layer, b - Endosperm, c - Scutellum,d - Coleoptile, e - Coleorhiza
(2) b - Aleurone layer, c - Endosperm, a - Scutellum,e - Coleoptile, d - Coleorhiza
(3) b - Aleurone layer, a - Endosperm, c - Scutellum,d - Coleoptile, e - Coleorhiza
(4) b - Aleurone layer, a - Endosperm, c - Scutellum,e - Coleoptile, d - Coleorhiza

76. Match the columns I, II and III and choose the correct combination from the options give:

Column I		Column II		Column III	
a.		1.	Adventitious root	K.	Mustard
b.		2.	Tap root	L.	*Triticum aestivum*
c.		3.	Fibrous root	M.	*Monstera*

(1) a - 2 - L, b - 1 - M, C - 3 - K
(2) a - 3 - K, b - 2 - L, C - 1 - M
(3) a - 3 - L, b - 1 - M, C - 2 - K
(4) a - 3 - K, b - 1 - M, C - 2 - L

77. Match the columns I, II and III and choose the correct combination from the options given:-

Column I		Column II		Column III	
a.	If the margins of sepals or petals overlap one another but not in any particular direction	1.	Vexillary	K.	
b.	When sepals and petals just touch one another at the margin, without overlapping	2.	Valvate	L.	
c.	Standard overlaps wings which in turn overlap the keel	3.	Twisted	M.	
d.	If one margin of the appendage overlaps that of the next one one and so on.	4.	Imbricate	N.	

(1) a - 2 - K, b - 3 - N, c - 1 - L, d - 4 - M
(2) a - 3 - K, b - 1 - L, c - 2 - M, d - 4 - N
(3) a - 3 - N, b - 4 - K, c - 2 - M, d - 1 - L
(4) a - 4 - K, b - 2 - M, c - 1 - L, d - 3 - N

78. Match the columns I, II and III and choose the correct combination from the options given:-

Column I		Column II		Column III	
a.	Ovules are borne on central axis and septa are present	1.		K.	Marginal
b.	Placenta forms a ridge along the ventral suture of the ovary	2.		L.	Axile

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c.	Placenta develops at the base of ovary	3.		M.	Free central
d.	Ovules are borne on central axis and septa are absent	4.		N.	Parietal
e.	Ovules develop on the inner wall of the ovary on peripheral part	5.		O.	Basal

(1) a - 5 - L, b - 3 - K, c - 4 - O, d - 2 - N, e - 1 - M
(2) a - 2 - L, b - 4 - N, c - 1 - M, d - 3 - O, e - 5 - K
(3) a - 2 - L, b - 3 - K, c - 4 - O, d - 1 - M, e - 5 - N
(4) a -1 - N, b - 2 - K, c - 4 - M, d - 5 - O, e - 3 - L

79. Match the columns I and II, and choose the correct combination from the options given:-

Column-I		Column-II	
a.	Septa are absent	1.	Sunflower
b.	False septum	2.	*Dianthus*
c.	Multilocular ovary	3.	Tomato
d.	Single ovule	4.	Mustard

(1) a - 2, b - 3, c - 4, d - 1
(2) a - 4, b - 2, c - 3, d - 1
(3) a - 2, b - 4, c - 3, d - 1
(4) a - 3, b - 1, c - 2, d - 4

80. Match the columns I and II, and choose the correct combination from the options given:-

Column-I		Column-II	
a.	Epigynous	1.	Brinjal
b.	Perigynous	2.	Peach
c.	Hypogynous	3.	Cucumber

(1) a - 1, b - 2, c - 3 (2) a - 3, b - 1, c - 2
(3) a - 3, b - 2, c - 1 (4) a - 2, b - 3, c - 1

81. The floral characters of Liliaceae are :-
(1) Six tepals, zygomorphic, six stamens, bilocular ovary, axile placentation
(2) Tetramerous, actinomorphic, polyphyllous, unilocular ovary, axile placentation
(3) Bisexual, actinomorphic, polyandrous, superior ovary, axile placentation
(4) Bisexual, zygomorphic, gamophyllous, inferior ovary, marginal placentation

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82. Given below are two statements:-
Statement-I :
In some plants, like grass, monstera and banyan roots arise from radicle.
Statement-II :
Epidermal cells of region of elongation in root form very fine and delicate, thread like structures called root hairs.
In the light of the above statements, choose the most appropriate answer from the options given below:
(1) Both Statement-I and Statement-II are correct.
(2) Both Statement-I and statement-II are incorrect.
(3) Statement-I is correct but Statement-II is incorrect.
(4) Statement-I is incorrect but Statement-II is correct.

83. Given below are two statements:-
Statement-I :
Underground stems of some plants such as grass and strawberry etc., spread to new niches and when older parts die new plants are formed.
Statement-II :
In *Pistia* and *Eichhornia* the lateral branches originate from the basal and underground portion of the main stem, grows horizontally beneath the soil and the come out obliquely upward giving rise to leafy shoots.
In the light of the above statements, choose the most appropriate answer from the options given below:
(1) Both Statement-I and Statement-II are correct.
(2) Both Statement-I and Statement-II are incorrect.
(3) Statement-I is correct but Statement-II is incorrect.
(4) Statement-I is incorrect but Statement-II is correct.

84. Given below are two statements:-
Statement-I : Micropyle is a scar on the seed coat through which the developing seeds are attached to the fruit, above the micropyle is a small pore called the hilum.
Statement-II : Opposite phyllotaxy is found in *calotropis* and whorled phyllotaxy is found in *Alstonia*.
In the light of the above statements, choose the most appropriate answer from the options given below:
(1) Both Statement-I and Statement-II are correct.
(2) Both Statement-I and Statement-II are incorrect.
(3) Statement-I is correct but Statement-II is incorrect.
(4) Statement-I is incorrect but Statement-II is correct.

85. Given below are two statements:-
Statement-I : Superior ovary is found in mustard, china rose, brinjal and inferior ovary is found in guava, ray florets of sunflower.
Statement-II : Mustard, *datura*, chilli have actinomorphic flowers and canna has asymmetric flower.
In the light of the above statements, choose the most appropriate answer from the options given below:
(1) Both Statement-I and Statement-II are correct.
(2) Both Statement-I and Statement-II are incorrect.
(3) Statement-I is correct but Statement-II is incorrect.
(4) Statement-I is incorrect but Statement-II is correct.

86. Given below are two statements:-
Statement-I : Epipetalous androecium is found in belladonna, *ashwagandha*.
Statement-II : Epitepalous androcium is found in *sesbania*, *Trifolium*.
In the light of the above statements, choose the most appropriate answer from the options given below:
(1) Both Statement-I and Statement-II are correct.
(2) Both Statement-I and Statement-II are incorrect.
(3) Statement-I is correct but Statement-II is incorrect.
(4) Statement-I is incorrect but statement-II is correct.

87. Given below are two statements: one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**:-
Assertion (A) : The zone, proximal to region of elongation in root, is called the region of maturation.
Reason (R) : The cells of elongation zone gradually differentiate and mature and form region of maturation.
In the light of the above statements, choose the **most appropriate** answer from the options given below :
(1) Both (A) & (R) are correct but (R) is not the correct explanation of (A).
(2) (A) is correct but (R) is not correct.
(3) (A) is not correct but (R) is correct.
(4) Both (A) & (R) are correct and (R) is the correct explanation of (A).

88. Given below are two statements: one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**:-
Assertion (A) : In some plants such as *Australian acacia*, the leaves are small and short lived.
Reason (R) : Leaves of certain insectivorous plants such as pitcher plant, are also modified into pitcher.
In the light of the above statements, choose the **most appropriate** answer from the options given below :
(1) Both (A) & (R) are correct but (R) is not the correct explanation of (A).
(2) (A) is correct but (R) is not correct.
(3) (A) is not correct but (R) is correct.
(4) Both (A) & (R) are correct and (R) is the correct explanation of (A).

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89. Given below are two statements: one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**:-

Assertion (A) :

Cymose type of inflorescence peduncle shows limited growth.

Reason (R) :

In cymose type of inflorescence the main axis terminates into a flower.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

(1) Both (A) & (R) are correct but (R) is not the correct explanation of (A).

(2) (A) is correct but (R) is not correct.

(3) (A) is not correct but (R) is correct.

(4) Both (A) & (R) are correct and (R) is the correct explanation of (A).

90. Given below are two statements: one is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**:-

Assertion (A) :

In mustard, chinarose and brinjal ovary is said to be superior.

Reason (R) :

Gynoecium is situated in the centre and other parts of flowers are located on the rim of thalamus almost at the same level.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

(1) Both (A) & (R) are correct but (R) is not the correct explanation of (A).

(2) (A) is correct but (R) is not correct.

(3) (A) is not correct but (R) is correct.

(4) Both (A) & (R) are correct and (R) is the correct explanation of (A).

91. Identify the correct set of statements :-

(a) In Rhizophora pneumatophores help to get oxygen for respiration.

(b) The region of stem where leaves are borne are called internodes.

(c) In plants like mint and jasmine a slender lateral branch arises from the base of the main axis and after growing aerially for some time arch downwards to touch the ground.

(d) In pinnately compound leaf, the leaflets are attached at a common point, i.e. at the tip of petiole, as in silk cotton.

(e) In racemose type of inflorescence the main axis continues to grow, the flowers are borne in an acropetal succession.

Choose the correct answer from options given below :

(1) (a) and (d) only

(2) (b), (c), (d) only

(3) (b), (d) and (e) only

(4)(a), (c) and (e) only

92. Identify the correct set of statements :-

(a) Ovary is half inferior in plum, rose, peach.

(b) If the margins of sepals and petals overlap one another but not in a particular direction as in *cassia* and gulmohar, the aestivation is called imbricate.

(c) A sterile stamen is called staminate.

(d) In *Dianthus* and *Primrose* the placentation is parietal.

(e) In mango and coconut fruit is known as legume.

Choose the correct answer from options given below :

(1) (a) and (b) only

(2) (a), (b), (c), (d) and (e) only

(3) (b), (c), (d) only

(4) (a) and (e) only

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93. Identify the correct set of statements :-

(a) In plants such as bean, gram and pea, the endosperm is present in mature seeds and such seeds are called endospermous.

(b) Embryo in monocot seed consists of one large and shield shaped cotyledon known as epiblast and a short axis with plumule and a radicle.

(c) The fruit in muliathi is legume and seed is endospermic.

(d) Diadelphous androecium is the feature of brassicaceae family.

(e) After fertilization ovules develop into fruit and ovary matures into seeds.

Choose the correct answer from options given below :

(1) All are correct

(2) All are incorrect

(3) (a), (c), (d) are correct

(4) only (c) is incorrect

94. Identify the correct set of statements :-

(a) Lupin, sweet pea are the medicinal plants belong to solanaceae family.

(b) $Br\oplus \overset{\frown}{\varnothing} P_{(3+3)} A_{3+3} \underline{G}_{(2)}$ is the floral formula of Liliaceae family.

(c) Petunia is an ornamental plant belongs to solanaceae family.

(d) Epipetalous androecium is found in liliaceae and epitepalous androecium is found in solanaceae.

(e) $\% \varnothing K_{(5)} C_{1+2+(2)} A_{(9)+1} \underline{G}_{1}$ is the floral formula of fabaceae family.

Choose the correct answer from options given below :

(1) (a), (b) and (d) only

(2) (c), (d) and (e) only

(3) (c) and (e) only

(4) (b), (c), (d) and (e) only

Exercise - III — ANSWER KEY

Question	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Answer	2	2	2	1	2	3	4	4	3	4	3	1	1	2	2
Question	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Answer	1	2	2	1	1	2	2	2	2	4	1	2	1	3	2
Question	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Answer	1	1	3	1	3	1	4	3	1	1	2	1	4	4	1
Question	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
Answer	2	3	2	1	1	2	1	4	4	4	1	3	4	3	3
Question	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
Answer	4	1	3	2	2	3	4	3	1	2	1	1	4	3	3
Question	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
Answer	3	4	3	3	3	3	2	3	4	1	3	4	1	4	2
Question	91	92	93	94											
Answer	4	1	2	3											

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